Gender Differences in K-12 Education: What Indicators Are Important?

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EXECUTIVE SUMMARY

Although gender differences have been identified in scholarly research, there is little state reporting of indicators by gender. The purpose of this paper is to identify the gender gaps in K-12 education that have been reported in the literature, to discuss how and when these gaps manifest themselves, and to recommend which of the educational performance indicators should be reported by gender in Georgia. Ultimately, the purpose of reporting indicators by gender is to aid in the efforts to close gender gaps in education.

A review of the literature reveals that gender gaps exist at both empirical and experiential levels. Empirically, gaps exist in math, science, and reading proficiency scores, as well as in course enrollment in higher level math and science and graduation rates. Experientially, gaps exist in self esteem levels, personal perceptions of ability, teacher interaction with students, as well as in the advice and opportunities that are afforded students. While studies show that girls and boys start kindergarten on a generally equal footing, by grade twelve girls are generally in a lower academic position than their male counterparts, particularly in the areas of math and science. Research shows that the most critical age for the development of gender gaps is early adolescence, particularly grade seven in which girls' educational performance in math and science begins to plummet.

Based on the research and data reported in this paper, the following indicators are recommended to be reported by gender. They are separated into indicators that are currently available by gender, and indicators that are recommended to be reported by gender in the future.

Currently Available to be Reported by Gender:

percentage of students scoring above the national average at grades 5 and 8 on the norm-referenced assessments in math

percentage of students scoring in the top quartile at grades 5 and 8 on the norm-referenced assessment in math

percentage of students taking remedial courses at a Georgia public college or university

percentage of students performing above the state standard at grade 11 on the curriculum-based assessments in math and science

***Recommended to be Reported by Gender in the Future*:**

percentage of students taking math or science AP courses or Post-secondary options

number of students passing science and math AP tests (scoring 3 or above) as a percentage of the total number of students taking AP courses

Gender Differences in K-12 Education: What Indicators Are Important?

INTRODUCTION

Gender gaps in school performance have only in recent years begun to receive more attention in scholarly research. In a 1989 study analyzing 138 articles on education reform published in professional journals from 1983 through 1987, Sadker, Sadker, and Steindam found gender bias to be discussed in only one percent of the articles. Addressing the factors related to gender that are involved in school performance is important to ensure that all students will succeed to the best of their ability. National and statewide educational goals which ignore gender are equivalent to "solutions designed to meet everyone's needs" which "risk meeting no one's" (Wellesley College Center for Research on Women, 1992, p. 9).

Gender gaps manifest themselves in various ways. Thus, it is important for policymakers, practitioners, and the public to be aware of gender differences in school performance. This demands national and statewide *reporting* of certain school indicators by gender. For instance, gender differences on standardized aptitude tests in math continue to be of concern in the education community. Although gender differences such as this have been identified by various sources, there is still little state reporting of indicators by gender.

This paper's focus is on gender differences in K-12 education on the national as well as state level. First, the literature and/or databases reporting significant gender gaps will be reviewed. Secondly, data showing gender gaps in the state of Georgia will be examined and compared to national data on this topic. While there are educational areas in which gender gaps are important that are *not* discussed in this paper, such as differences in sports and extra-curricular activities, this paper's focus will be on core curricular areas in which gender gaps exist (i.e. math and science) and in which there has been prior reporting of indicators for students as a whole. Additionally, theories explaining gender differences will be summarized. The ultimate goal is to determine which of the many performance indicators identified in the literature and reported by national and state sources are the most critical, feasible, and effective ones to report *by gender* in the state of Georgia in the ongoing efforts to close gender gaps in education.

GENDER DIFFERENCES IN INDICATORS: A LITERATURE REVIEW

In 1992 the AAUW Report: *How Schools Shortchange Girls* (Wellesley College Center for Research on Women, 1992) pointed out how the current debate on

education reform neglects gender bias, referring to sex-unspecified "students" or "youth" in their discourse. The report noted that the few studies that have addressed the interaction of gender with school performance in past decades have traditionally focused on teenage pregnancy and its connection to dropout as the main problems faced by girls. While these issues are important, teen pregnancy is not the only factor effecting dropout among girls, and these issues are not the only factors associated with differential achievement of boys and girls (Furstenberg, 1991). It has only been in recent years that interest in and scholarly work on gender differences in school experiences and performance have become popular (Entwisle, Alexander, and Olson, 1994; Flynn and Rahbar, 1994; Thorne, 1993).

There are a variety of indicators used to measure school performance and student outcomes. Commonly studied indicators of student outcomes that monitor gender gaps are student proficiency in math, science, and reading; college entrance examinations such as the SAT; and high school graduation rates and dropout rates. Research demonstrates that factors influence gender gaps in early grades, and these gender gaps grow and persist through high school. For instance, National Assessment of Educational Progress data shows that the gender difference in math confidence is slight at grade three but increases by grades seven and eleven to a point where girls' confidence in their math abilities is substantially lower than boys' (Coley, 1989).

Several factors are related to these gender gaps in indicators, such as curriculum design, teacher-student interaction, and the variability of self esteem levels (Rogers and Gilligan, 1988; Simmons and Blyth, 1987). Coley (1989) claims that advice given to students as well as the opportunities afforded them interact with cultural expectations to determine students' preparation for and attainment in school. Indeed, gender frames this process.

MATH, SCIENCE, AND READING PROFICIENCY

A large portion of research has focused on math performance. There has been less emphasis in the literature on science performance, and the least emphasis on reading performance. This research usually focuses on early adolescent children (Baker and Jones, 1993; Esquivel and Brenes, 1988; Hallinan and Sorensen, 1987), as research has pointed to early adolescence as a crucial period for the development of gender differences (Esquivel and Brenes, 1988).

While girls and boys start kindergarten on a generally equal footing (Rogers and Gilligan, 1988), by grade twelve girls are generally in a lower academic position than their male counterparts, particularly in the areas of math and science (Entwisle, Alexander, and Olson, 1994; National Science Foundation, 1990; Hyde, Fennema, and Lamon, 1990). Differences in math performance have been found to begin increasing at grade seven (Jones, 1984; Friedman, 1989). However, girls consistently have slightly higher scores than males in adolescence through high school in the areas of

reading and writing (Coley, 1989). The gender gap is closing in math achievement but not in science achievement (Wellesley College Center for Research on Women, 1992).

GENDER DIFFERENCES IN COMPUTER USE

Sources report differences across gender with regard to use of and comfort with computers. Coinciding with patterns of math achievement, studies show that girls' use of computers tends to decrease starting in the middle school years. By high school, girls are less likely than boys to join computer clubs or take computer courses (Sanders, 1993; Holmes, 1991). Hativa and Shorer (1989) found that boys' performance was superior to girls when using computer-assisted instruction (CAI), a finding consistent across two socio-economic status (SES) groups. Gender differences in computer use have been associated with the differential socialization of boys and girls, made manifest in such places as the home where fathers and brothers use computers the most, or on television where males are often portrayed in computer-related roles in programs and commercials (Sanders, 1993).

SAT SCORES

Literature on the gender gap in high-school education has examined differences in SAT scores, focusing on the math section. Some studies have suggested that the main factors related to gender differentials favoring males on aptitude tests in math are greater participation in advanced math courses and SES (Clark and Grandy, 1984; College Board News, 1987; Loewen, Rosser, and Katzman, 1988). Even when boys and girls are trained similarly, a gender gap still exists (Sharp, 1989). Sharp analyzed gender differences in SAT math scores among a population of public school students in 1986. Testing two factors, courses taken and SES, she found that neither are important in determining gender differences in scores. She also found that other factors, such as student and parental attitudes toward mathematics, do not help to explain the gender gap in SAT math scores.

Gender differences in performance on the SAT is determined in part by differential skills in content areas (Wellesley College Center for Research on Women, 1992). For instance, girls have been found to be better at computation in math, while boys are better at problem-solving (Hyde, Fennema, and Lamon, 1990). Thus, girls' performance is better on test items which involve algebra and arithmetic, while boys do better on items involving physics and calculus. These findings relate to the fact that boys are more likely to be encouraged to take courses in physics and calculus (Mullis et al., 1991). Regardless of specific gender differences in math skills, boys still out-perform girls on almost *all* items on the math SAT (Rosser, 1989).

CLASSROOM ORGANIZATION AND GENDER DIFFERENCES IN INTERACTION

Research has also reported more subtle gender differences in determinants of school achievement. These differences involve interaction patterns between students and between teachers and students that encourage distinct behavior by gender. For instance, studies have found that teachers are more attentive to boys by calling on them and encouraging boys more in class than girls (Sadker and Sadker, 1994; Houston, 1985; Mahoney, 1983; Spender, 1982). When girls are affirmed in the classroom, it is usually for neatness and politeness as opposed to ability for which boys are validated (Houston, 1985). Good, Slavings, Harel, and Emerson (1987) found that male students begin in kindergarten asking more questions in class than girls. With little variation over the school years, boys ask slightly more questions in the classroom than girls through grade twelve. These classroom inequalities can be explained in part by the gendered language patterns of men and women in society at large. Studies have shown that in mixed group settings, men talk more and longer, direct conversations more than women, and are more likely to interrupt women (Spender, 1980; Tannen, 1990; Zimmerman and West, 1975). The classroom can be seen as just a microcosm of these linguistic patterns in society.

These patterns of interaction can have serious consequences for girls' education. Hallinan and Sorensen (1987) report that boys are more likely than girls to be placed in high-ability math groups in classrooms, although these authors do not find this to have much of an effect on math achievement in their study. Teachers send subtle messages to girls about their lower expectations in math and science (Wellesley College Center for Research on Women, 1992). Unfortunately, these gender differences both in the interaction within and the organization of the classroom, while quite valid measures, are more covert and not as tangible as something like a test score. Therefore, gender differences in the classroom are not systematically monitored, nor are they reported at national or state levels as part of school indicators of performance.

Another important aspect of classroom organization is the gender breakdown of teachers and administrators employed in K-12 education. Gutmann reported in 1987 that 84 percent of elementary school teachers were female, while 99 percent of school superintendents were male. She argues that these percentages not only reflect but perpetuate and maintain a society in which men are in ultimate positions of power and women can only have power over children. Teacher composition can contribute to differential experiences of girls and boys, and it should be monitored until the proportions of men and women in administrative and teaching positions have become more equal (Okin, 1989).

SELF ESTEEM DIFFERENCES

Experiences at school have been connected to the plummeting of girls' self esteem that occurs in early adolescence (American Association of University Women, 1991; Orenstein, 1994; Rogers and Gilligan, 1988; Simmons and Blyth, 1987). According to these sources, girls at early and middle adolescence begin to internalize the larger cultural message that women should be passive and quiet. Lower self esteem of girls, combined with treatment by parents and teachers, has an impact on their course choices and how they perceive their own ability in certain areas, such as math and science. For example, National Assessment of Educational Progress data reveals that girls' confidence in their math abilities decreases substantially from third grade to eleventh grade. When given the statement "I am good with numbers," 66 percent of third grade boys and 64 percent of third grade girls responded "yes." By grade seven, only 57 percent of girls (and 64 percent of boys) agreed with this statement, and by grade eleven only 48 percent of girls (and 60 percent of boys) agreed (Coley, 1989). The plummeting of girls' confidence in their math abilities is only one example of how their lower levels of self esteem can affect their educational achievement.

DATA ON INDICATORS

There is a range of nationally reported indicators used for the monitoring of gender equity in education. Some of these include school enrollment, course enrollment, achievement scores, college entrance examination scores, dropout rates, and graduation rates. Certain states also report some of these indicators. Some of the most recent indicators for the state of Georgia and at the national level are offered in the following sections.

DATA FOR THE STATE OF GEORGIA

Data from the state of Georgia used in this report include scores on graduation tests in the areas of math, science, and language arts, as well as differences by gender in numbers of college diplomas and vocational diplomas received. Graduation data on math, science, and language arts were used because previous research has recognized gender gaps in these areas, especially in math and science where girls' scores have been found to decrease substantially by the eleventh grade. Data on types of diplomas were used because they could be an indication of gender differences in preparation for further education.

Gender gaps were computed in the above areas across all of the districts in Georgia. Figure 1 shows a bar graph of the median gap for each of these data. The median represents the score at which 50 percent of school systems fell above or below. Gaps were computed by subtracting girls' scores from boys' scores. As seen in Figure 1, scores on the eleventh grade science test and the eleventh grade math

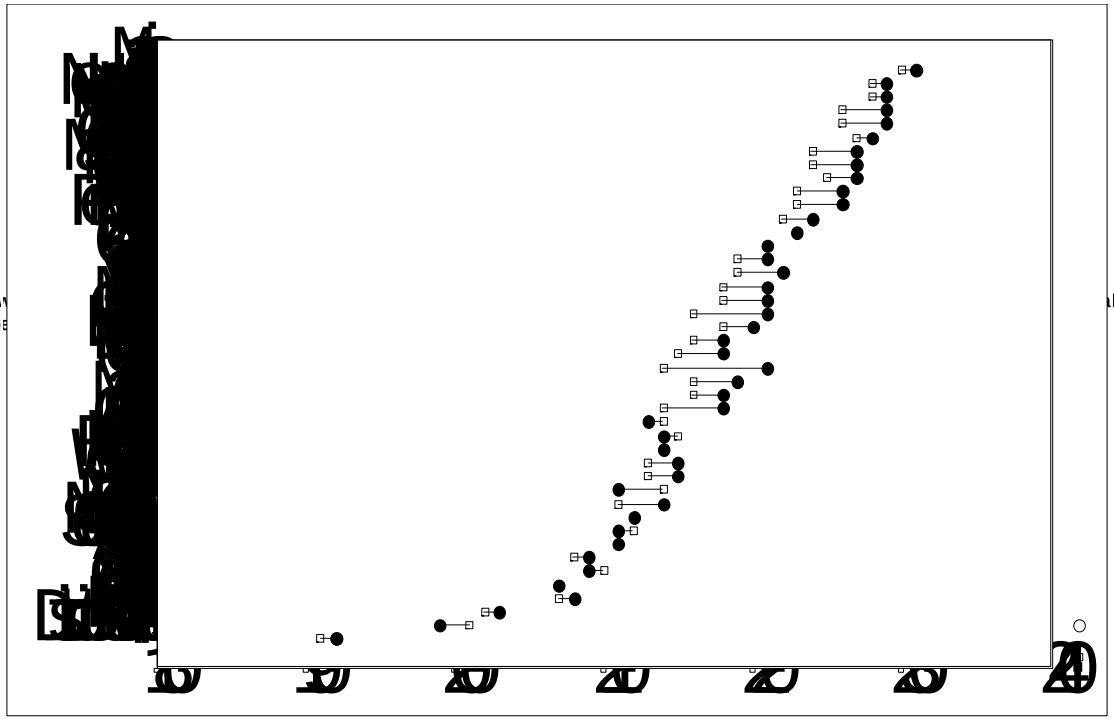
test are positive, indicating that boys scored higher than girls for those two tests. For eleventh grade science, the data reveals a median gap score of six percent, meaning that six percent more boys than girls are passing the science test. Similarly, the median gap score for the math test is two percent, which means that two percent more boys than girls are passing the math graduation test. On the other hand, girls scored higher than boys on the eleventh grade language arts test, and there are more girls than boys who are getting a college preparatory diploma as well as a vocational diploma. For instance, the figure shows that the median gap score is 11 percent for college preparatory diploma, meaning that 11 percent more girls than boys are getting this diploma.

This figure supports previous literature which points out the importance of focusing on science and math scores as two very critical areas for assessing gender gaps in education. The gap favoring girls for language arts scores is also supported by previous research that reports a consistent gap in reading and writing. Further, the data on diploma types displayed in Figure 1, particularly the college preparatory diploma, are consistent with research that shows more women than men enrolled in college.

When the gaps shown in Figure 1 are broken down by school system, results show that 52.9 percent of school systems have a gap favoring boys in science that is between five percent and 20 percent. Furthermore, 5.7 percent of school systems have a gap where 20 percent more boys than girls are passing the science test. Regarding math scores, there are 34.5 percent of school systems with a math gap favoring boys that is between five and 20 percent, and 2.9 percent of systems have a gap where 20 percent more boys than girls are passing the math test. Conversely, in the area of language arts, approximately 95 percent of school systems have either no gap or a gap favoring girls.

These findings confirm that the gender gaps favoring boys that are most frequent in the school systems are those in science and math graduation test scores. As seen in Figure 1 and discussed above by school system, the science gender gap is bigger and more widespread than other gaps favoring boys in the state of Georgia. These data are consistent with research that shows the science gap is not closing as quickly as the math gap. These findings emphasize the importance of focusing on math and science scores as critical indicators in the state of Georgia to assess gender gaps.

Figure 1: Median Gender Gap Scores in Georgia



Note:
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Figure 2: NAEP 4th Grade
Math Gender Gaps, 1992

GA Male
GA Female

Source: National Assessment of Educational Progress, 1992.

Male

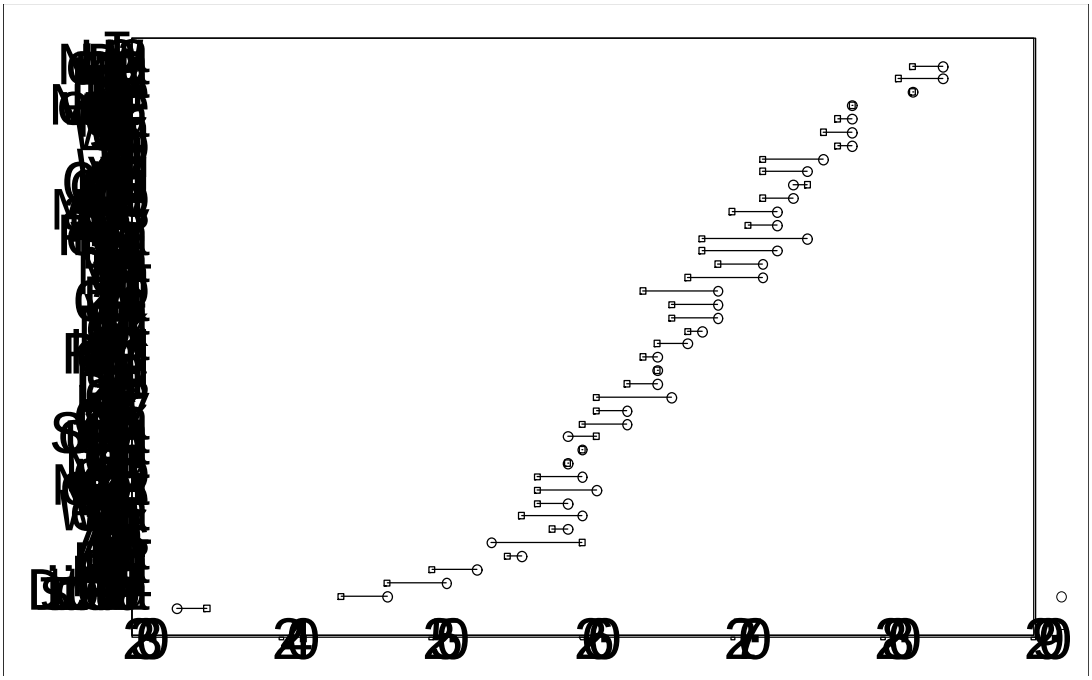
Female

NATIONAL DATA

Based on National Assessment of Education Progress (NAEP) data from 1992, girls had a higher average reading proficiency than boys in grades 4, 8, and 12. This was the case in all three achievement levels (Basic, Proficient, and Advanced). Fourth grade girls were scoring higher than boys in reading in every state. The median gender gap for all states was six percent and for the state of Georgia the median gender gap was similar, at five percent.

Also in 1992, boys had a higher average proficiency than girls in math. The only significant differences, however, were at grade 12 (NAEP, 1992). Unfortunately, the NAEP does not report grade 12 by state, therefore, we can not present these data. Figures 2 and 3 show gender gaps in average math proficiency for 4th and 8th grade, respectively. As seen in these figures, boys scored higher than girls in all but six states at the 4th grade level and in all but 5 states at the 8th grade level. Indeed, the

Figure 3: NAEP 8th Grade Math Gender Gaps, 1992



Source: National Assessment of Educational Progress, 1992.

state of Georgia was one of the six states at the 4th grade level in which girls scored higher than boys. However, by the 8th grade, the gap for the state of Georgia had reversed. The median state gap in the nation at grade 8 was two proficiency points. That is, boys were scoring two points higher than girls. The gap for the state of Georgia was slightly higher, at three proficiency points. This means that the gap reversed and was larger by grade 8 in Georgia and that if Georgia follows national trends the gap will increase through grade 12. Based on the increased gap from 4th to 8th grade, it is plausible to conclude that middle school grades are a place to begin reporting. With regard to science, national data in 1992 indicated that boys outscored girls in science proficiency at ages 9, 13, and 17. This trend has been constant since 1970 (NAEP, 1992).

National SAT scores in 1993 indicated that males scored forty-five points higher than females on the math section, and eight points higher than females on the verbal section. Combining the math and verbal sections, males' average scores were fifty-three points higher than females' (930 for males, as opposed to 877 for females).

Based on the findings by gender for student achievement tests and different proficiencies by gender in math and science at the national and local levels, it is important to track course enrollments in these areas for girls and boys, as this could be a source of difference in student learning. With this in mind, the Council of Chief State School Officers reported in 1990 that, across sixteen states, gender differences in course enrollment decreased from 1982 to 1987, but there were still gender differences in enrollment in upper level math and science courses. There were three to thirteen percent more boys than girls enrolled in calculus and physics in 1989 (State Departments of Education, 1989).

THEORIES TO EXPLAIN GENDER GAPS IN EDUCATION

Theories attempting to explain some of the gender differences found in K-12 education have focused a great deal on differential socialization of the sexes (Eccles and Jacobs, 1986; Fennema, 1980; and others). The fact that statistics have consistently shown boys to achieve higher scores in math and science, and girls to score higher in reading and writing, seems to suggest that there are external social factors operating to explain this difference. Biological or genetic explanations are not found in the more recent research to illuminate the reasons for gender gaps in education, with a few exceptions (Benbow and Stanley, 1980). Scholars focus on social psychological and cultural determinants, such as differential exposure to courses, different treatment by teachers, classroom organization, and the widely held socialization, beginning in the family of origin, which have been associated with boys' and girls' differing levels of self esteem and differing opinions about their own abilities and occupational aspirations. Essentially, the logic behind using all of these

determinants to explain gender gaps is the following: differential opportunities afforded students shape numerous socialization processes they experience and, in turn, these shape their school performance (Baker and Jones, 1993).

Studies have discussed ways in which parents' and teachers' expectations for math performance are higher for boys than for girls (Entwisle and Baker, 1983; Fox, Tobin, and Brody, 1979). Further, research has found that girls are more likely to think of math as a "male subject," and to be less confident in their math ability than boys, which is directly tied to their math performance (Fennema and Sherman, 1977; Reyes, 1984). Boys have been reported to believe math is a "male subject" (Hyde, Fennema, and Lamon, 1990). Entwisle, Alexander, and Olson (1994) explain how these differing sex-role identities and socialization experiences which begin at early ages could result in girls being less interested in math and science and taking less math and science courses in high school, which may lay the framework for gender gaps in math performance at later ages.

SEX ROLE SOCIALIZATION PERSPECTIVE

Thorne (1993) describes how the theory of sex role socialization (also called the "separate worlds" model) which is used to describe boys' and girls' experiences in school and other settings has been quite common in the literature (see, for instance, Gilligan, 1982). This theory emphasizes how girls and boys interact at school separately from each other, generally in same-sex clusters. However, it overemphasizes sex differences and detracts from a complete and contextual understanding of gendered social relations among children. The "separate worlds" theoretical model has been described as tending "to abstract gender from its social context" (Thorne, 1993, p. 116).

Some scholars have critiqued the sex-role socialization theory as being problematic, as it simplifies socialization to be received by "passive recipients," and ignores the complexity of people and their abilities to be active agents in their own socialization (Leach and Davies, 1990; Davies, 1982). For instance, how does a sex-role socialization framework explain the children who do not behave in "sex appropriate" ways (Leach and Davies, 1990)? Sex role socialization should not be conceived as static, but rather, as an emerging and changing process (Goffman, 1977).

Kessler, Ashenden, Connell, and Dowsett (1985) contend that sex role socialization frameworks minimize the importance of economic and social forces by focusing exclusively on individual attitudes. Indeed, the development of the school system is part of a social, structural, and political process which produces a gender biased labor market (Kessler et al., 1985; O'Donnell, 1984). Kessler et al. (1985), in theorizing about gender relations in education, stress that gender is a complex social structure, involving the interaction of many societal institutions (the family, the state,

education, etc). Schools, one of these institutions, are "constructing gender" within the societal framework (Kessler, et al., 1985).

SCHOOL AND NEIGHBORHOOD RESOURCES PERSPECTIVE

Entwisle et al. (1994) offer another framework to study gender difference in education, particularly differences in math performance. Adding to the sex-role socialization model but using a more sociological and contextual perspective, they examine school and neighborhood resources and their effects on gender differences in math education. Studies have shown that young boys are more encouraged and girls are more discouraged in their exploration of the outside world and neighborhoods (Block, 1983; Medrich, Roizen, Rubin, and Buckley, 1982). These gendered play activities have been associated with boy's greater numerical and spacial ability (Bing, 1963). Further, Entwisle et al. (1994) speculate that boys' greater freedom and independence in outdoor settings could contribute to their better cognitive growth in math. The affects of SES are acknowledged by these authors. They note that young boys in disadvantaged neighborhoods might have less access to these math strengthening activities in poor and/or crime filled neighborhoods. These authors suggest that differences by SES may lead to greater variability in boys' test scores when compared to girls' test score variation.

CONCLUSIONS AND RECOMMENDATIONS

Although there have been slight declines in the gender gaps in areas such as high school course enrollment and math and science proficiency, there are still clearly defined differences in educational experience by gender. While the sex role socialization perspective points to the origin of much of this difference in early childhood socialization, research confirms that more distinct differences among girls and boys begin to be apparent at approximately the middle school age and are quite distinct by grade twelve. Gender differences that seem most critical based on the literature are not only proficiency in upper level math and science courses, but also self esteem and personal perceptions of ability to succeed in these disciplines. This could lead to gender differences in future educational attainment and career aspirations.

We recommend the reporting of indicators that specifically focus on math and science as opposed to other areas, such as language arts or reading and writing. We also recommend that scores in these areas be reported starting at grade 5, and then at grade 8 and 11. These recommendations are based primarily on three reasons. First, science and math are the areas with the most widespread gaps favoring males in the state of Georgia. Second, research specifically shows that math and science gaps increase drastically at about grade seven (Jones, 1984; Friedman, 1989), while gender gaps favoring girls in reading and writing are relatively consistent over school years

and do not exhibit drastic drops at any certain grade level (Coley, 1989). Given this, we should start reporting math and science gaps prior to seventh grade and track any gap changes by reporting these gaps in later grades. Because gaps in male performance in language arts, for example, have not been found to exhibit a pattern of bias, we are not currently recommending reporting of any of these indicators. Third, the literature points out various explanations for why girls are not doing as well as boys in math and science, such as socialization patterns which lead, for example, to girls considering math a "male subject," and lack of parental and teacher encouragement for girls in math and science. Our goal in selecting indicators to report by gender is to assist in the efforts to close these gender gaps. With knowledge of some specific explanations for gender gaps in math and science found in the literature, we should be able to accomplish our goal if we report these indicators by gender. This is because educational professionals, parents, and other readers of this paper will know where to focus their energy in the classrooms and homes in the ongoing effort to close these gaps. These three reasons taken together support the claim that math and science should be the substantive areas of focus for indicators by gender.

The course enrollment and proficiency levels of both girls and boys must also be understood and followed over time to ensure a successful and prosperous future for all children. Therefore, we think it is also important to monitor gender differences in taking Advanced Placement courses in math and science and passing the tests. These indicators, along with an indicator of the number of students taking remedial courses in Georgia colleges or universities, will aid in our assessment of students' readiness for college. The availability of such data by state that tracks areas where the most difference has been found by gender is crucial to successfully analyze these differences, and monitor each state's ability to close these gender gaps.

Based on the data and research presented in the preceding pages, we recommend that the most important and critical areas for which indicators reported by gender should be established and maintained in the state of Georgia are the following areas, under Goals Three and Five. These recommended indicators are separated into those that we presently have and can report by gender now, and those indicators that we recommend to be reported by gender in the future.

Currently Available to be Reported by Gender:

percentage of students scoring above the national average at grades 5 and 8 on the norm-referenced assessments in math

percentage of students scoring in the top quartile at grades 5 and 8 on the norm-referenced assessment in math

percentage of students taking remedial courses at a Georgia public college or university

percentage of students performing above the state standard at grade 11 on the curriculum-based assessments in math and science

***Recommended to be Reported by Gender in the Future*:**

percentage of students taking math or science AP courses or Post-secondary options

number of students passing science and math AP tests (scoring 3 or above) as a percentage of the total number of students taking AP courses

We base these recommendations on the above argument that gender gaps continue to persist in math and science performance and are shown to drastically change at approximately grade seven, unlike performance in areas such as reading and writing. Coinciding with these gaps are the differences in course enrollment by gender that exist mainly in the areas of math, science, and computers. Thus, tracking AP enrollment and proficiency, performance in math and science, and remedial course enrollment in college is important. We believe that by monitoring indicators in areas where there are gender gaps we can begin a path to analyze these differences with the ultimate goal of closing gender gaps which have persisted in education.

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December 15, 1995

Dear Reader:

The following report was prepared as a part of the overall mission of the Georgia Council for School Performance to provide impartial and accurate information so that schools and the communities they serve will have appropriate benchmarks for performance and accountability.

In measuring performance, it is important to ensure that all of Georgia's students are receiving an appropriate education. This objective involves recognizing differences that might exist in school performance by gender and race. This report focuses on gender differences in education. The members of the Council for School Performance requested that the Applied Research Center at Georgia State University examine the literature on differences in performance between young men and young women and recommend how these differences should be measured and reported as a part of the indicator process. We hope educators will use this information to reduce the gender gaps that exist and improve the performance of all groups.

We would like to acknowledge the helpful comments on earlier drafts of this report of the following two reviewers: Susan McGee Bailey, Executive Director of the Wellesley Center for Research on Women, and Doris J. Wright, Ph.D., Associate Professor at Georgia State University.

Sincerely,

Pat Willis